

### Abstract of the Disclosure

A gas concentration detecting apparatus comprises a gas concentration sensor and a gas concentration calculator. The sensor has first to third cells. A gas to be detected is introduced in a chamber and the first cell is responsible for discharging and changing oxygen from and into the chamber. The second cell detects a concentration of a specific gas component of the gas that has passed along the first cell. The third cell detects a concentration of residual oxygen in the gas that remains after discharge of the oxygen through the first cell. The calculator takes in a current acquired from the second cell measured with a voltage applied thereto and calculates the specific gas component concentration based on the current. The calculator includes plural concentration calculating means whose concentration detecting ranges are mutually different in a scale. The specific gas component concentration is calculated every concentration calculating means.